

The patient recovered completely and was treated with co-trimoxazole 3 tablets twice daily for a further six months. At six months x-ray examination showed sclerosis of the right sacroiliac joint and irregularities of the joint margins.

Comment

This case illustrates the facts, well-recognised by microbiologists, that most salmonella serotypes may invade the blood stream and that systemic disease need not be preceded by gastrointestinal symptoms,¹ nor need the patient have an overt susceptibility to bacteraemia. Acute suppurative arthritis or osteomyelitis is usually due to *Staphylococcus aureus*,¹ and we did not suspect a salmonella infection because of the absence of gastrointestinal symptoms in the patient and her family.

The course of salmonella infection in bone or joint may be chronic⁵ and treatment required for many weeks. Chloramphenicol is therefore unsuitable. Resistance to ampicillin may appear rapidly, as in our patient, and co-trimoxazole proved to be a suitable alternative. There have only been 32 cases reported of *S. okatie* infection in England and Wales for the years 1970-1976 inclusive. There are no reported isolates from non-human sources for the years 1973-1976 inclusive. *S. okatie* may have been originally introduced into the United Kingdom in animal foodstuff imported from Nigeria.

We are grateful to the Public Health Laboratory Service Communicable Disease Surveillance Centre for providing information about *S. okatie* infections.

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Transverse myelitis after diphtheria, tetanus, and polio immunisation

Transverse myelitis from any cause is rare in infancy. We report here a case which developed in a 7-month-old girl six to seven days after her first immunisation with diphtheria and tetanus toxoid and oral poliomyelitis vaccine.

Case history

A 7-month-old girl was admitted to hospital with a four-day history of a slight cough and a hoarse cry associated with mild irritability and lassitude. On the day of admission her mother had noticed that her daughter was not moving her legs, and with hindsight thought that she had not moved them for the previous 24-36 hours. Previously the child had been normal and healthy. She had started to crawl, and could sit unsupported. She was the second child of young, healthy, non-consanguineous parents, and there were no perinatal complications. The older child was normal. Six days before the onset of the illness she had been inoculated for the first time against diphtheria and tetanus, and given her first oral polio immunisation.

She had a temperature of 38.2 °C but looked well and alert. She had a slightly hoarse cry, and her respiration was diaphragmatic. She had complete flaccid paralysis of her legs and lower trunk. The knee and ankle jerks were exaggerated bilaterally with ankle clonus, and the plantar responses were extensor. Abdominal reflexes were absent. Her bladder was palpable up

to the umbilicus. Sensation to pinprick was absent up to the level of T4/5; at this level the child cried and tried to push the pin away. The power, tone, and reflexes in her arms were normal and the cranial nerves were normal. All other systems were normal.

Initial investigations showed a white cell count of 16.2×10^9 l ($16\,200\text{ mm}^3$), with 58% lymphocytes and 34% mature neutrophils. Her cerebrospinal fluid (CSF) was clear and under pressure of 160 mm of water. It contained four polymorphs, two lymphocytes, two red cells, and a protein concentration of 0.3 g l (30 mg/100 ml). A myelogram gave a normal result. Virology of the CSF and throat showed nothing abnormal. Poliovirus type 2 was isolated from the stools.

She was started on dexamethasone 1 mg four times daily for four days, followed by prednisolone 5 mg three times daily continued for a six week period. The bladder was catheterised for two days, after which bladder function was automatic and recatheterisation was not required. Her temperature fell to normal within 24 hours, and her general condition remained good, though there was no obvious improvement in her paraplegia. She was discharged from hospital 10 days later.

After discharge there was slight improvement in the child's condition. The power returned to her lower trunk muscles and she had some power in the hip flexors that enabled her to maintain the sitting position and to get into the crawling position. She crawled around the floor by pulling herself along on her arms. The reflexes in her legs remained brisk with extensor plantar responses, and abdominal reflexes were absent. She developed some tricks for swinging her legs around, and would lift them with her hands. She was wearing splints at night to keep her limbs in an optimum position. Her sensory level was at T7/8, and her bladder emptied automatically. Bowel function was normal and the urine was not infected. Her social and intellectual development remained entirely normal.

Comment

Although myelitis may have occurred by chance in this child, the onset of her symptoms occurred at the time at which other reactions to immunisation are most frequently found. Many complications of immunisation have been described in infants and young children, but these are usually attributed to the pertussis component of triple vaccine,¹ or smallpox vaccination. Even in these conditions, or in association with serum administration or antirabic treatment, myelitis is a rare type of neurological complication. Only one case of myelitis has been reported in an infant receiving triple vaccine, and in that child the illness was complicated by cytomegalovirus infection.² One further case of transverse myelitis in a 22-year-old man after diphtheria immunisation given as alum-precipitated toxoid has been reported.³

Careful studies after the introduction of live oral polio vaccination⁴ showed no cases of myelitis after over 30 million doses of live oral polio vaccine, and only rare cases of other types of neurological disease. Holt *et al.*,⁵ however, have recently reported two cases of transverse myelitis after immunisation with live rubella vaccine. Our case is therefore the first one of transverse myelitis reported in association with the use of either oral poliomyelitis vaccine or with the diphtheria and tetanus inoculation in an otherwise well child. Without other evidence, however, we cannot be sure which of these antigens is the one most likely to have been responsible for the myelitis.

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